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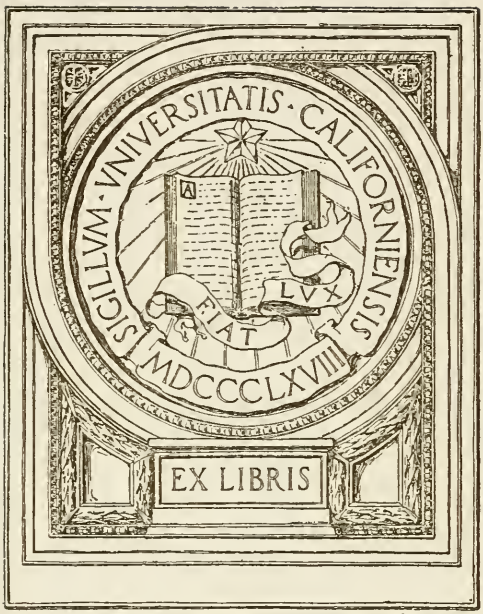

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MORTALITY REPORT

OF THE

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Mortality Report of the Tennessee State Board of Health.

Mortality statistics have two very important sanitary purposes to serve:—one being that of stimulating the unit of society to a consciousness of its conditions with reference to the causes which bring about preventable deaths; the other that of directing efforts devoted to the correction of the conditions at fault.

This short bulletin contains a report in brief of the number of deaths from several preventable causes, together with the death rate of each per 100,000 population for the year 1916.

From a careful review of the data here presented the reader may form a definite idea of the conditions which prevail in Tennessee with respect to these fundamental affairs.

TABLE NO. 1.

Showing the number of deaths in the State and its death rate per 100,000 population from each of several causes, with color divisions in tuberculosis and pellagra. The rates given are based upon the United States Census estimate of the population of the State for 1915—except when otherwise indicated.

Tuberculosis (All Forms)	4,499	198.1
White	2,656	*155.2
Colored	1,843	*405.5
Tuberculosis (Pulmonary)	4,085	179.8
White	2,406	*140.6
Colored	1,679	*354.9
Tuberculosis (All Other Forms)	414	18.2
White	250	*14.6
Colored	164	*34.9
Pneumonia (Lobar and Broncho)	2,451	107.8
Cancer (Including All Forms of Malignant Tumors	775	34.1
Typhoid Fever (Including Para-Typhoid)	906	39.8
Malaria	491	21.6
Pellagra	834	36.7
White	464	*27.1
Colored	370	*78.2
Measles	22	0.9
Whooping Cough	157	6.9
Scarlet Fever	33	1.4
Diphtheria and Croup	489	21.5
Influenza	398	17.5
Cerebro-Spinal Meningitis	139	6.1
Diarrhea and Enteritis (under 2 years of age)	1,107	49.4
Puerperal Conditions (Total)	324	14.2
Puerperal Septicaemia	161	7.0
Puerperal (Conditions other than Septicaemia)	163	7.1
Homicides	400	17.6
Suicides	154	6.7
Railroad Accidents (All Forms)	132	5.8
Automobile Accidents	31	1.3
Accidents (All Other)	727	32.0
Smallpox	42	1.8
	14,116	

*As per Census 1910.

To report in great detail on each preventable disease mentioned in Table No. 1 would require more space than is available in a short bulletin. We have therefore chosen to report in detail on only five, viz., Tuberculosis, Typhoid Fever, Pellagra, Diarrhea and Enteritis of Infants under 2 years of age and Malaria. These diseases constitute the major causes of preventable deaths and therefore offer the greatest hindrance to the progress of the State.

TUBERCULOSIS

In Table No. 2 will be found the number of deaths from tuberculosis, grouped according to color of decedent and according to the form of the disease, in each county of the State, together with the death rate of each, and the per cent of the total number of deaths of each due to tuberculosis. This is to enable a comparison of the tuberculosis death rate of the State, and the rate of any county or city of the State, with that of any other county in Tennessee, and with the rates of the States given in Table No. 3.

From the per cent of all deaths due to tuberculosis the reader is enabled to determine the relative importance of tuberculosis as a cause of death. If 20 per cent of the deaths of a county were due to tuberculosis, one out of every five deaths in the county was due to tuberculosis.

Bearing in mind that it is by comparison that we determine our relationships with the world about us, we present in Table No. 3 the tuberculosis death rate of each of several States to enable the reader to determine the relationship which obtains between Tennessee and those States with respect to this major health problem.

From the data here presented we may get a very broad view of the tuberculosis problem as it exists today in Tennessee. Broadly speaking, we may say that the fundamental causes of the disease are more effective, or that the fundamental defects, both individual and general, which bring about tuberculosis, are present in Tennessee to a more marked degree than in most other States.

We would call particular attention to the difference in the White and Colored tuberculosis death rates in Tennessee. This difference is very striking, and indicates that the influences which cause tuberculosis predominate among the colored race.

It would be improper to think that these 4,499 persons contracted tuberculosis and died of the disease in one year. These deaths, in a majority of cases, marked the ending of a long fight, in which the disease was conqueror. There are now as many more persons in Tennessee who are in the advanced stages of the disease, who will die in 1916, and as many more doomed to the same fate in 1917, which means that on January 1st, 1916, there existed in Tennessee 9,000 persons with the disease (tuberculosis) sufficiently advanced as to prove fatal within two years.

It would be impossible to determine accurately the number of moderately advanced and incipient cases existing. It would be reasonable to assume, however, that there are ten of such cases for each death that has occurred in one year, which would mean that our mortality records indicate that there are now in the State 44,990 persons with a lesion of tuberculosis, of which the individual may, or may not be, aware. The tuberculosis process in these cases may be arrested, or be permitted to advance, depending upon the resistance of the individual.

The average age at death from tuberculosis is 34 years. At least, one half of all the persons who died of the disease were either fathers or mothers. They have left the orphan handicapped by a hereditary predisposition to the disease; with the infection in their systems as a result of intimate contact, and in many instances in poverty as a result of the prolonged illness in the home. A large number of these orphans as a result of all these circumstances will join the throng of advanced cases as the years go by.

There are many other visions of the tuberculosis situation one may get by a careful analysis of the data—a vision which would lead one to recognize that the combined influences which bring about the development of the advanced case of tuberculosis are cumulative in their action, and that some of them are so broad and so far reaching as to link the dead to the unborn.

TABLE NO. 2

Showing the number of deaths from Tuberculosis, in its various forms, in each county and city in the State, together with the death rate of each per 100,000 population.

	Pulmonary Tuberculosis		Tuberculosis All Other Forms		Total No. Deaths	Death Rate Per 100,000 Populatn	Per cent of Total Deaths
	White	Colored	White	Colored			
Anderson	26	0	10	0	36	146	15
Bedford	25	26	3	1	55	243	18
Benton	12	0	2	0	14	110	9
Bledsoe	4	1	0	0	5	96	8.6
Blount	23	2	2	1	28	129	10
Bradley	25	11	1	0	37	223	13
Campbell	21	4	0	0	25	76	9
Cannon	26	3	0	0	29	268	19
Carroll	41	16	3	1	61	255	17
Carter	23	1	4	0	28	128	9
Cheatham	14	6	2	0	22	205	18
Chester	12	6	1	0	19	211	18
Claiborne	15	1	2	0	18	72	10
Clay	13	1	1	10	151	161	23
Cocke	28	2	4	0	34	174	14
Coffee	26	5	0	0	31	198	15
Crockett	14	12	0	1	27	167	12
Cumberland	6	0	1	1	8	81	12
*Davidson	58	60	6	4	128	279	17
Nashville	87	148	20	18	273	244	12
Decatur	8	6	1	0	15	150	17
DeKalb	13	2	1	1	17	110	9
Dickson	27	8	3	1	39	189	16
Dyer	23	24	2	2	51	171	12
Fayette	3	55	0	5	63	206	13
Fentress	4	0	0	0	4	49	7
Franklin	20	15	1	0	36	175	15
Gibson	36	43	3	5	87	200	15
Giles	41	48	6	6	101	309	23
Grainger	25	2	0	0	27	195	14
Greene	41	7	8	1	56	178	15
Grundy	5	1	0	0	6	70	13
Hamblen	25	4	0	2	31	134	11
*Hamilton	69	24	6	5	104	230	13
Chattanooga	36	73	7	13	129	220	11
Hancocke	9	1	0	0	10	93	10
Hardeman	15	32	1	1	49	212	12
Hardin	16	3	1	1	21	120	18
Hawkins	33	5	3	0	41	175	16
Haywood	12	60	4	3	79	301	16
Henderson	16	7	1	2	26	147	14
Henry	18	13	4	4	39	150	15
Hickman	12	12	0	0	24	138	19
Houston	7	4	0	1	12	193	17
Humphreys	20	5	2	0	27	191	19
Jackson	6	1	2	0	9	60	6
James	5	0	0	0	5	96	9
Jefferson	22	3	0	1	26	147	12
Johnson	12	0	2	0	14	93	11
*Knox	88	15	6	1	110	166	12
Knoxville	54	24	6	4	88	233	12
Lake	0	3	0	0	3	32	5
Lauderdale	18	28	0	0	46	218	14
Lawrence	27	2	7	0	36	192	20
Lewis	9	2	0	0	11	161	14
Lincoln	24	22	5	1	52	200	17
Loudon	15	6	1	0	22	146	12
Macon	21	1	2	0	24	156	15
McMinn	26	6	2	0	34	154	9
McNairy	16	4	2	0	22	135	13

	Pulmonary Tuberculosis		Tuberculosis All Other Forms		Total No. Deaths	Death Rate Per 100,000 Populatn	Per cent of Total Deaths
	White	Colored	White	Colored			
*Madison	18	22	0	2	42	181	13
Jackson	16	21	2	1	40	226	13
Marion	16	10	1	0	27	137	13
Marshall	28	8	3	1	40	232	17
Maury	33	48	3	4	88	215	17
Meigs	7	1	0	0	8	131	12
Monroe	31	6	0	2	39	178	14
Montgomery	41	55	7	1	104	309	19
Moore	10	1	0	0	11	229	21
Morgan	15	1	0	0	16	129	10
Obion	30	14	4	2	50	162	12
Overton	33	0	2	0	35	204	22
Perry	17	0	0	0	17	193	18
Pickett	4	0	0	0	4	80	5
Polk	6	0	0	0	6	39	5
Putnam	27	0	4	1	32	148	14
Rhea	16	9	2	0	27	169	14
Roane	37	6	3	2	48	205	16
Robertson	14	24	5	5	48	187	11
Rutherford	39	27	3	4	73	214	16
Scott	10	0	2	0	12	86	11
Sequatchie	8	1	0	0	9	195	23
Sevier	26	1	3	2	32	138	13
*Shelby	27	124	0	8	159	243	13
Memphis	108	270	14	26	418	286	12
Smith	25	7	2	2	36	194	20
Stewart	22	8	0	0	30	207	14
Sullivan	29	2	7	0	38	121	11
Sumner	56	33	7	4	100	396	26
Tipton	9	34	2	1	46	155	12
Trousdale	4	5	0	0	9	155	13
Unicoi	6	0	1	0	7	80	7
Union	28	0	3	0	31	271	24
Van Buren	6	0	1	0	7	259	28
Warren	30	6	4	0	40	242	20
Washington	75	8	4	3	90	278	15
Wayne	7	3	2	----	12	100	9
Weakley	38	13	3	1	55	166	15
White	34	0	1	1	36	235	20
Williamson	16	13	1	2	32	132	12
Wilson	28	22	3	2	55	217	18
	2,406	1,679	250	164	4,499	198.1	14.3

*Outside City.

Tuberculosis, All Forms	Deaths	*Death rate Number per 100,000 Population
White	2,656	155.2
Colored	1,843	405.5

*As per Census 1910

TABLE NO. 3

Showing the Tuberculosis death rates of all Registration States for the year 1913.

California	202.2	New Hampshire	120.2
Colorado	185.9	New Jersey	153.3
Connecticut	140.5	New York	167.1
Indiana	149.7	Ohio	132.2
Kentucky	201.5	Pennsylvania	120.9
Maine	126.9	Rhode Island	162.7
Maryland	194.5	Utah	48.9
Massachusetts	144.2	Vermont	107.4
Michigan	91.7	Virginia	168.7
Minnesota	107.4	Washington	92.8
Missouri	143.5	Wisconsin	97.8
Montana	108.8		

Average Death Rate All Registration States	144.6
Death Rate of Tennessee, 1915	198.1
White	*155.2
Colored	*402.5

There are two States with a tuberculosis death rate above that of Tennessee and twenty-one with rates below Tennessee.

Average Death Rate of the Rural Part of all Registration States	126.6
Average Death Rate of the Registration Cities	165.5
Rural Part of Tennessee	180.8
Cities in Tennessee	240.9

*As per U. S. Census 1910.

TYPHOID FEVER

The reader will please refer to Table No. 4 aud compare the death rate of his county with that of the State, and with the rates of the States mentioned in Table No. 5.

From this comparison the relationship which obtains between the various units mentioned may be determined with regard to the typhoid problem.

Only 21 of the typhoid deaths occurred in March, 1915, whereas 135 occurred in August. The reason for this great difference is that the fly prevails in the summer and fall seasons. It cannot be doubted therefore, that the fly is by far the most important agent in the transmission of typhoid fever.

The average age at death from typhoid fever is 28 years. A large majority of the persons who died of typhoid fever last year were between the ages of 20 and 40.

Expert epidemiologists have estimated that about 18 cases of typhoid fever have occurred for each death that occurs in one year. At this ratio there were 16,308 cases of typhoid in Tennessee last year.

The mortality rate of typhoid fever may be properly interpreted as reflects the sanitary conditions of the various communities.

TABLE NO. 4. TYPHOID FEVER.

Showing the number of deaths from typhoid fever in each county in the State together with the death rate of each per 100,000 population.

	No. deaths	Death rate		No. Deaths	Death Rate
Anderson	6	33.9	Clay	1	10.7
Bedford	14	61.9	Cocke	7	35.9
Benton	12	94.0	Coffee	9	57.6
Bledsoe	4	75.2	Crockett	8	49.6
Blount	10	46.3	Cumberland	2	20.4
Bradley	4	24.0	*Davidson	22	46.3
Campbell	6	18.7	Decatur	8	80.0
Cannon	8	74.0	DeKalb	15	97.0
Carroll	15	62.0	Dickson	9	43.7
Carter	8	37.0	Dyer	22	74.0
Cheatham	5	46.7	Fayette	9	29.5
Chester	9	99.0	Fentress	4	49.3
Claiborne	1	4.0	Franklin	7	34.1

	No. Deaths	Death Rate
Gibson	22	51.4
Giles	7	21.4
Grainger	4	28.9
Greene	13	41.5
Grundy	0	00
Hamblen	7	49.5
*Hamilton	10	22.1
Hancock	3	27.8
Hardeman	6	26.0
Hardin	2	11.4
Hawkins	7	29.6
Haywood	15	57.2
Henderson	13	76.4
Henry	19	73.0
Hickman	4	24.0
Houston	5	80.0
Humphreys	2	14.1
Jackson	9	60.0
James	2	38.4
Jefferson	6	33.8
Johnson	2	13.7
*Knox	16	24.1
Lake	0	00
Lauderdale	16	75.7
Lawrence	4	21.3
Lewis	3	43.7
Lincoln	10	39.0
Loudon	6	39.8
Macon	9	58.4
McMinn	12	54.5
McNairy	3	18.4
*Madison	13	56.0
Marion	9	45.9
Marhsall	18	107.1
Maury	11	27.2
Meigs	1	16.3
Monroe	10	45.8
Montgomery	31	92.2
Moore	0	00.
Morgan	7	57.5
Obion	16	51.9
Overton	6	34.9
Perry	5	56.8
Pickett	1	20.0
Polk	4	25.8
Putnam	10	46.0
Rhea	5	31.4
Roane	6	26.2
Robertson	13	50.7
Rutherford	14	42.2
Scott	2	14.3
Sequatchie	0	00.
Sevier	7	31.2
*Shelby	16	24.5
Smith	2	10.8
Stewart	16	108.1
Sullivan	5	16.8
Sumner	10	39.0
Titpon	11	37.3
Trousdale	3	51.7
Unicoi	2	25.0
Union	3	26.3
Van Buren	0	00.
Warren	6	36.3
Washington	9	28.3
Wayne	5	41.6
Weakley	15	47.0
White	6	37.5
Williamson	13	53.7
Wilson	11	43.4
Total Rural	784	41.3
Nashville	43	37.1
Chattanooga	12	20.5
Knoxville	12	31.3
Jackson	9	51.1
Memphis	46	31.4
Total City	122	32.4
Total State	906	39.8

TABLE NO. 5. TYPHOID FEVER.

Showing the death rate of the registration area and of all Registration States from typhoid fever for the year 1913.

	Death Rate per 100,000 Pop.	Rural Death Rate	City Death Rate
Entire Registration Area	17.9		
California	15.9	15.1	16.6
Colorado	17.0	17.2	16.6
Connecticut	11.3	7.8	12.9
Indiana	25.0	23.6	28.2
Kentucky	42.7	46.2	27.1
Maine	12.0	10.4	17.3
Maryland	33.3	36.6	29.5
Massachusetts	7.9	8.7	8.6
Michigan	18.4	13.9	25.4
Minnesota	10.8	9.1	14.1
Missouri	24.4	25.7	22.3
Montana	22.7	19.5	32.0
New Hampshire	11.2	11.8	12.1
New Jersey	9.6	8.7	10.2
New York	10.3	11.8	9.9
*North Carolina	57.4	51.4	65.4
Ohio	24.0	25.0	22.9
Pennsylvania	18.1	16.2	20.2
Rhode Island	8.3	7.3	8.5
Utah	22.2	17.1	20.8
Vermont	7.8	8.3	4.3
Virginia	33.3	23.1	28.1
Washington	10.3	12.1	7.8
Wisconsin	9.0	5.7	15.5

*In incorporate towns of over 1,000 population.

DIARRHEA AND ENTERITIS OF INFANTS UNDER 2 YEARS OF AGE

Insanitary conditions and improper diet are the two important factors which have contributed to the mortality from this cause.

The deaths of many other children over 2 years of age occurred, but they are not tabulated for the reason the standard of 2 years had to be adhered to in order to enable an accurate comparison of the death rate of Tennessee with those of other States.

TABLE NO. 6.

Diarrhea and Enteritis of Infants Under 2 Years of Age.

Showing the number of deaths in each county and city together with the death rate of each per 100,000 population.

	No. deaths	Death rate
Anderson	11	62.1
Bedford	11	48.6
Benton	1	7.9
Bledsoe	0	00.
Blount	12	55.6
Bradley	9	54.0
Campbell	4	12.2
Cannon	6	54.1
Carroll	10	41.8
Carter	23	106.9
Cheatham	9	84.1
Chester	3	33.0
Claiborne	14	56.2
Clay	2	21.5
Cocke	13	66.6
Coffee	10	64.1
Crockett	12	74.9
Cumberland	0	00.
*Davidson	42	88.2
Decatur	1	9.9
DeKalb	1	6.4
Dickson	4	19.4
Dyer	16	53.6
Fayette	19	29.4
Fentress	3	36.8
Franklin	10	48.6
Gibson	29	67.6
Giles	12	36.8
Grainger	10	72.0
Greene	16	51.4
Grundy	2	23.3
Hamblen	11	77.7
*Hamilton	66	145.8
Hancock	4	37.1
Hardeman	5	21.7
Hardin	7	39.9
Hawkins	0	00.
Haywood	25	95.2
Henderson	9	52.8
Henry	9	34.5
Hickman	3	18.1
Houston	0	00.
Humphreys	3	21.2
Jackson	2	13.3
James	1	19.2
Jefferson	4	22.5
Johnson	3	20.6
*Knox	19	28.6
Lake	1	10.6
Lauderdale	7	33.2
Lawrence	5	26.7
Lewis	3	43.7
Lincoln	7	26.9
Loudon	7	46.4
Macon	3	19.4
McMinn	11	49.8
McNairy	6	36.8
*Madison	2	8.6
Marion	4	20.4
Marshall	5	29.7
Maury	9	20.2
Meigs	1	16.3
Monroe	11	50.4
Montgomery	11	32.7
Moore	1	20.8
Morgan	5	40.3
Obion	16	51.9
Overton	6	34.9
Perry	1	11.3
Pickett	2	40.0
Polk	7	44.1
Putnam	8	36.4
Rhea	7	44.0
Roane	18	78.6
Robertson	4	15.6
Rutherford	7	21.1
Scott	4	28.7
Sequatchie	1	21.7
Sevier	7	31.2
*Shelby	57	56.6
Smith	5	27.0
Stewart	5	33.8
Sullivan	10	33.8
Sumner	9	35.1
Tipton	15	50.8
Trousdale	2	34.4
Unicoi	3	37.9
Union	1	8.7
Van Buren	0	00.
Warren	5	30.0
Washington	9	27.8
Wayne	5	41.6
Weakley	14	43.9
White	10	62.5
Williamson	6	24.7
Wilson	8	31.5
Total Rural	817	
Nashville	112	96.3
Chattanooga	35	59.7
Knoxville	22	57.4
Jackson	10	56.8
Memphis	111	75.7
Total City	290	
Grand total	1,107	48.2

*Outside the City.

PELLAGRA

As will be noted in Table No. 7 there occurred 839 deaths from pellagra in Tennessee in 1915. Only 11 of the ninety-six counties failed to have a death from pellagra, which indicates that the disease is well distributed over the State. Hardeman county shows the highest death rate of any of the counties. This is probably explained by the fact that the West Tennessee Hospital for the Insane is located in this county.

But few of the States in the registration area have a very high death rate from pellagra; in fact, only 1,015 deaths occurred in the entire registration area in 1913, and a large number of these occurred in southern cities and in a few southern States.

The Registration States with the greatest number of deaths in 1913 were as follows: North Carolina (in municipalities of over 1,000 population) 157, Kentucky 104, Virginia 165.

Tennessee had 644 deaths in 1914 and 839 in 1915, an increase of 31.6 per cent. It is difficult to determine as to whether or not the increase is actual or apparent.

The question as to whether or not the disease actually increased as rapidly as indicated above might be raised on the ground that the disease is always recognized now, whereas it was not always recognized in the past, but we are unable to determine as to whether or not this is true, or the extent it would affect the death rate if it were true.

INTERPRETATION

By reason of the fact that the exact cause of the disease is not known we are not in position to interpret our mortality statistics.

Accepting as true the recent announcements of Dr. Jos. Goldberger of the U. S. Public Health Service, we would be justified in saying that our mortality rate indicates that a large number of people are eating an unbalanced diet, composed of a disproportionately large amount of carbohydrate elements, such as bread, potatoes and sweets, and disproportionately small amount of proteid elements, such as eggs, meat, milk and legumes.

Again one could not say definitely as to whether an unbalanced diet is eaten on account of inability to procure the necessary elements for a balanced diet, or on account of an eccentricity in diet.

The disease occurrs chiefly among the poorer classes. This observation is made in every country in which the disease occurs.

The proteid elements of diet are the most costly elements. The price of a dozen eggs will buy enough meal to last a family much longer than the eggs would last.

We are in position to say definitely that a faulty diet is the only influence which we know to be a factor in producing the disease, and that a good, well-balanced diet is the only agent we know to be of value in curing the disease.

Under present conditions then the disease is not susceptible of executive control. The people in the community in which the disease prevails may take the step which will lead to a reduction in the mortality rate of the disease if they feel disposed, by correcting the faults above referred to.

TABLE NO. 7. PELLAGRA.

Showing the number of deaths from pellagra in each county together with the death rate of each per 100,000 population, for the year 1915.

Counties	Number Deaths	Rate per 100,000
Anderson	14	77.9
Bedford	3	13.2
Benton	1	7.8
Bledsoe	2	37.7
Blount	5	23.1
Bradley	7	42.1
Campbell	5	15.3
Cannon	2	18.5
Carroll	3	12.5
Carter	4	18.6
Cheatham	4	37.4
Chester	2	22.2
Claiborne	1	4.0
Clay	0	00.
Cocke	2	10.2
Coffee	1	6.4
Crockett	3	18.6
Cumberland	0	00.
Davidson (outside)	29	61.0
Decatur	2	20.0
DeKalb	1	6.5
Dickson	5	24.2
Dyer	4	13.4
Fayette	18	65.5
Fentress	0	00.
Franklin	3	14.6
Gibson	13	30.3
Giles	6	18.6
Grainger	1	7.0
Greene	8	25.5
Grundy	3	35.3
Hamblen	13	92.2
Hamilton (outside)	27	59.7
Hancock	1	9.3
Hardeman	48	208.6
Hardin	0	00.
Hawkins	2	8.5
Haywood	19	72.1
Henderson	1	5.8
Henry	4	15.3
Hickman	3	18.0
Houston	4	64.5
Humphreys	1	7.0
Jackson	0	00.0
James	2	38.4
Jefferson	2	11.3
Johnson	0	00.
Knox (outside)	42	63.3
Lake	0	00.
Lauderdale	6	28.4
Lawrence	4	21.3
Lewis	2	29.4
Lincoln	6	23.0
Loudon	3	20.0
Macon	1	6.5
McMinn	16	72.7
McNairy	4	24.5
Madison (outside)	7	30.1
Marion	8	40.8
Marshall	0	00.
Maury	14	33.1
Meigs	0	00.
Monroe	1	4.5
Montgomery	13	38.6
Moore	0	00.
Morgan	2	16.1
Obion	5	16.2
Overton	1	5.8
Perry	1	11.3
Pickett	0	00.
Polk	3	19.3
Putnam	2	9.2
Rhea	11	69.0
Roane	11	48.0
Robertson	6	23.4
Rutherford	0	00.
Scott	2	14.4
Sequatchie	0	00.
Sevier	1	4.4
Shelby (outside)	94	143.9
Smith	1	5.4
Stewart	1	6.7
Sullivan	2	6.7
Sumner	3	11.7
Tipton	11	37.2
Trousdale	1	17.2
Unicoi	1	12.6
Union	1	8.7
Van Buren	0	00.
Warren	6	36.3
Washington	7	21.6
Wayne	2	16.6
Weakley	2	6.2
White	6	37.5
Williamson	3	12.4
Wilson	9	35.5
Nashville	34	29.3
Chattanooga	52	88.8
Knoxville	34	88.9
Jackson	8	45.8
Memphis	110	76.8
Total	839	36.7
White	469	*27.4
Colored	370	*78.2

*As per census of 1910.

MALARIA

In the table herewith presented will be found the number of deaths from malaria in each county and city in the State, together with the death rate of each from this cause for the year 1915.

This disease is not so extensively distributed as other diseases. It prevails chiefly in one grand division of the State.

One cannot accurately determine the number of cases of malaria that occurred last year, because this disease is not so fatal as many others; in fact, it has no definite mortality rate. It has been estimated, however, that at least 300 cases of the disease have occurred in one year for every death that occurs in this time. This is one of the most conservative of the many morbidity estimates made. At this rate there were 149,100 cases of malaria in Tennessee last year. The enormity of the amount of sickness from this cause in one year is therefore apparent. Some of the cases, of course, were more or less chronic; some were acute, and the amount of time lost by bread winners from gainful occupations cannot be determined.

The financial loss which each community suffers in one particular may, however, be approximately estimated. Fertile lands in a malarial section will not sell for more than ten to twenty-five per cent of the price less fertile lands bring in a non-malarial section.

The scientific questions involved in the prevention of malaria have been worked out probably more definitely than those of any other preventable disease, and the prevention of the disease can be accomplished probably as cheaply as any other. Its prevention, however, cannot be made so much an individual matter. It may be said that the prevention of malaria will be accomplished only by a concerted community effort.

SCIENTIFIC CONSIDERATION

The fundamental scientific facts upon which rests the structure of malaria prevention are these:

1. Malaria is caused by a germ—the plasmodium malariae.

2. This germ is transmitted from person to person by one species of mosquitoes.

3. The germ remains alive in the blood of a person who has had an attack of the disease for years, provided treatment is not properly administered, or not continued a sufficient length of time. These are called "malaria carriers," and constitute a constant source of infection.

From these statements of facts we may arrive at three conclusions with respect to the prevention of malaria. We may conclude: First, that if there were no mosquitoes of a certain type malaria would cease to occur; second, if there were no malaria carriers there would be no source from which a mosquito could get the germ, and therefore the disease would cease to occur; third, if a well person could prevent an infected mosquito from getting access to him the disease would cease to occur. These conclusions suggest three lines of procedure in preventing the disease:

1. That of mosquito eradication.
2. That of properly treating all malaria carriers.
3. That of screening the house so as to prevent the access of mosquitoes.

Experience has taught that either of these lines of procedure may be pursued with profit, but that the best results will follow the adoption of all three of them.

DESTRUCTION OF MOSQUITOES

The destruction of the mosquito is accomplished by draining or treating stagnant ponds of water of certain types. Fish and ducks may be employed to some advantage when neither of the other two methods are practicable.

The treatment of a carrier should be administered by a physician. It can be carried out in winter, or in summer, and should be done in connection with bacteriologic work, in order that carriers may be diagnosed and their cure determined by this means.

Screening should be a 28-mesh, and should be well done, and they should be kept closed.

One need only mention that the canal zone has a relatively small amount of malaria now as compared with previous years to convince the most skeptical that money properly spent in the prevention of malaria will accomplish gratifying results.

TABLE NO. 8. MALARIA.

Showing the number of deaths in each county and city, together with the death rate of each.

	No. deaths	Death rate per 100,00
Anderson	0	00.
Bedford	0	00.
Benton	7	55.1
Bledsoe	0	00.
Blount	0	00.
Bradley	0	00.
Campbell	0	00.
Cannon	0	00.
Carroll	11	40.0
Carter	0	00.
Cheatham	5	40.7
Chester	3	33.3
Claiborne	0	00.
Clay	3	32.2
Cocke	0	00.
Coffee	1	6.4
Crockett	6	37.2
Cumberland	0	00.
*Davidson	0	00.
Decatur	0	00.
DeKalb	0	00.
Dickson	2	9.7
Dyer	16	53.6
Fayette	16	62.2
Fentress	0	00.
Franklin	6	29.2
Gibson	19	44.3
Giles	8	24.3
Grainger	0	00.
Greene	0	00.

	No. Deaths	Death Rate
Grundy	0	00.
Hamblen	0	00.
*Hamilton	5	11.0
Hancock	0	60.
Hardeman	6	26.0
Hardin	6	34.2
Hawkins	0	00.
Haywood	16	61.0
Henderson	7	41.1
Henry	7	26.9
Hickman	1	6.0
Houston	0	00.
Humphreys	4	28.3
Jackson	0	00.
James	1	19.2
Jefferson	1	5.6
*Knox	0	00.
Lake	6	63.9
Lauderdale	23	109.0
Lawrence	0	00.
Lewis	0	00.
Lincoln	0	00.
Loudon	0	00.
Macon	0	00.
McMinn	1	4.5
McNairy	7	42.9
*Madison	19	82.3
Marion	2	19.2
Marshall	3	17.8
Maury	1	2.4
Meigs	0	00.

	No. Deaths	Death Rate
Monroe	1	4.5
Montgomery	2	5.9
Moore	0	00.
Morgan	0	00.
Obion	15	48.7
Overton	0	00.
Perry	6	68.1
Pickett	0	00.
Polk	0	00.
Putnam	0	00.
Rhea	0	00.
Roane	0	00.
Robertson	1	3.9
Rutherford	1	3.0
Scott	0	00.
Sequatchie	0	00.
Sevier	0	00.
*Shelby	66	101.0
Smith	1	5.4
Stewart	5	33.7
Sullivan	0	00.
Sumner	0	00.
Tipton	40	135.5
Trousdale	1	17.2
Unicoi	0	00.
Union	0	00.
Van Buren	0	00.
Warren	0	00.
Washington	0	00.
Wayne	3	24.8
Weakley	5	15.6
White	6	37.5
Williamson	1	4.1
Wilson	0	00.
Nashville	5	4.3
Chattanooga	0	00.
Knoxville	0	00.
Jackson	10	56.8
Memphis	106	72.5
Grand Total	497	21.6

*Outside city.

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